Integrative practice
Part 1
Computational mathematics

Professor: Gilberto Huesca Juárez

Name: _____

Student ID: _____

Read the assignment before start
In Canvas, write the names and student IDs of all the team members, and the group
This activity is in pairs
Make the proposed activities and at the end, if there are programs to deliver, upload the files packaged within a ZIP file.
The name of the main Java file must be Main.java.
The name of the ZIP file must be Exxxxproject1.zip where xxxxx is your student ID. For example, if your student ID is 123456 , the file name must be E123456project1.zip
The programs must be properly commented with JavaDoc.
LATE DELIVERY NOT APPLICABLE.
This activity counts as 10% of the final grade.

Make a Java program that reads from a file the elements that define an NDFA - λ and builds the equivalent DFA.

The transition table will be defined in a txt file. The file shall be defined as follows:

- The first line indicates the set of states of the automata separated by commas.
- The second line indicates the alphabet symbols separated by commas
- The third line indicates the initial state
- The fourth line indicates the set of final states separated by commas.
- The following lines indicate the evaluation of the extended transition function with the elements of the alphabet in the following format:

state, symbol = > state1, state2, ... stateN

Example, the following line

q0, a = > q0 , q1, q5

indicates that the NDFA processes the following: $\bar{\delta}(q0, a) = \{q0, q1, q5\}$

It is not necessary that all transitions are specified in this file. An evaluation may not appear if a state indicating that the result of that evaluation is the empty set

Finally, the program should print the set of states in the AFD and the equivalence of each state to the states of the original automaton. In addition, you must print the transition table of the DFA.

Do not worry about validating the values in the input file. Suppose that were built correctly.